CLAIMS

In the Claims

1. (Currently Amended) An apparatus including a decoder comprising:

   a decoder ~~decoding element~~ arranged to operate in a first mode for decoding a turbo encoded data stream and in a second mode for decoding a viterbi encoded data stream, wherein:

   ~~the decoder is characterised in that~~ the decoder ~~decoding element~~ is responsive to a first control signal from a controller for switching from the first mode to the second mode during decoding of a turbo code block so as to interrupt decoding of the turbo code block and responsive to a second control signal for switching from the second mode to the first mode to allow continued decoding of the turbo code block, thereby resuming decoding of the turbo code block.

2. (Currently Amended) ~~A decoder~~ An apparatus according to claim 1, wherein the decoder ~~decoding element~~ is arranged to store data generated during the decoding of the turbo code block.

3. (Currently Amended) ~~A decoder~~ An apparatus according to claim 2, wherein the decoder is ~~decoding element~~ arranged to retrieve the stored data generated during the decoding of the turbo code block to allow continued decoding of the turbo code block.

4. (Currently Amended) ~~A decoder~~ An apparatus according to claim 1, wherein the decoder ~~decoding element~~ is arranged to switch from the first mode to the second mode after an iteration of the decoding of the turbo code block has been ~~complete~~ completed.

5. (Currently Amended) ~~A decoder~~ An apparatus according to claim 1, wherein the decoder ~~decoding element~~ comprises a first logic element that is arranged to calculate forward recursion/backward recursion metrics for a turbo encoded

data stream when the decoder ~~decoding element~~ is operating in the first mode and to calculate path metrics and survivor path metrics for a viterbi encoded data stream when the decoder ~~decoding element~~ is operating in the second mode.

6. (Currently Amended) ~~A decoder~~ An apparatus according to claim 5 ~~2~~, wherein the decoder ~~decoding element~~ further comprises a second logic unit that is arranged to calculate a posteriori data for a turbo encoded data stream using the forward recursion/backward recursion metrics generated by the first logic unit.

7. (Currently Amended) ~~A decoder~~ An apparatus according to claim 5 ~~2~~, wherein the decoder ~~decoding element~~ further comprises a memory that is arranged to store forward recursion/backward recursion metrics generated by the first logic unit when the decoder ~~decoding element~~ is operating in the first mode and to store path metrics and survivor path metrics generated by the first logic unit when the decoder ~~decoding element~~ is operating in the second mode.

8. (New) An apparatus according to claim 1, wherein the decoder further comprises a memory to store data generated during the decoding of the turbo code block.

9. (New) An apparatus according to claim 8, wherein the decoder is arranged to retrieve the stored data from the memory generated during the decoding of the turbo code block to allow continued decoding of the turbo code block.

10. (New) An apparatus according to claim 5, wherein the decoder further comprises a memory to store data generated during the decoding of the turbo code block.

11. (New) An apparatus according to claim 6, wherein the decoder is arranged to switch from the first mode to the second mode after an iteration of the decoding of the turbo code block has been completed.

12. (New) An apparatus according to claim 6, wherein the decoder further comprises a memory to store data generated during the decoding of the turbo code block.

13. (New) An apparatus according to claim 6, wherein the decoder further comprises a memory that is arranged to store forward recursion/backward recursion metrics generated by the first logic unit when the decoder is operating in the first mode and to store path metrics and survivor path metrics generated by the first logic unit when the decoder is operating in the second mode.

14. (New) An apparatus according to claim 13, wherein the decoder is arranged to switch from the first mode to the second mode after an iteration of the decoding of the turbo code block has been completed.

15. (New) An apparatus according to claim 5, wherein the decoder is arranged to switch from the first mode to the second mode after an iteration of the decoding of the turbo code block has been completed.

16. (New) An apparatus according to claim 5 wherein the decoder is arranged to store data generated during the decoding of the turbo code block.

17. (New) An apparatus according to claim 17 wherein the decoder is arranged to retrieve the stored data generated during the decoding of the turbo code block to allow continued decoding of the turbo code block.